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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/775,854	BAPST ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jerry Martin Blevins	2883	

-- **The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**  
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communication filed November 14, 2006.
2. ☒ The allowed claim(s) is/are 1-23.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date <u>210604</u></li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date <u>20061215</u>.</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
|---|---|

  
**BRIAN HEALY**  
**PRIMARY PATENT EXAMINER**

## DETAILED ACTION

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kevin Mason on December 19, 2006.

The application has been amended as follows:

In claim 21, line 2, between the words "therewith" and "one", delete "comprising" and insert -- wherein the circuit board comprises--.

### *Response to Arguments*

Applicant's arguments, see pages 1-5, filed November 14, 2006, with respect to the rejection of claims 1-23 have been fully considered and are persuasive. The rejection of claims 1-23 has been withdrawn.

### *Allowable Subject Matter*

Claims 1-23 are allowed.

The following is an examiner's statement of reasons for allowance:

approved  
for  
entry  
But  
12/21/06

Regarding claim 1, the prior art, as best exemplified by US 6,982,437 to Gallup et al., teaches a processing method (Figures 5A-5C, wherein the processing begins in Figure 5A and proceeds to Figure 5A as outlined in column 5, line 44 – column 6, line 36), the method comprising the steps of providing one or more etch stop layers (514) in proximity to the one or more waveguides (external fibers, as discussed in column 6, line 37 – column 8, line 3), and using the one or more etch stop layers to selectively remove material (Figure 5A and corresponding text) to provide one or more cavities (540) having a defined position and depth (column 6, lines 15-17), wherein the one or more cavities provide for an optical alignment of one or more optical elements (as discussed in column 6, lines 15-17, wherein the alignment is optical in that desired wavelengths emitted from the external fibers are properly aligned with optical element 530). However, Gallup, either alone or in combination with the prior art, does not disclose or render obvious that the processing is of a circuit board having one or more optical waveguides associated therewith, that at least one of the etch stop layers comprises one or more fiducials therein, and that the removal of material is from a surface of the circuit board.

Claims 2-20 are allowed based on their dependence from allowed base claim 1.

Regarding claim 21, Gallup teaches one or more cavities (540) each with a positioning and depth (column 6, lines 15-17) defined using one or more etch stop layers (514) located in proximity to one or more waveguides (external fibers, as discussed in column 6, line 37 – column 8, line 3), wherein the one or more cavities provide for an alignment of one or more optical elements (as discussed in column 6,

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lines 15-17, wherein the alignment is optical in that desired wavelengths emitted from the external fibers are properly aligned with optical element 530). However, Gallop, either alone or in combination with the prior art, does not disclose or render obvious the above arrangement as part of a circuit board having one or more optical waveguides associated therewith, that the cavities exist within the circuit board, and that at least one of the etch stop layers comprises one or more fiducials therein.

Claims 22 and 23 are allowed based on their dependence from allowed base claim 21.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

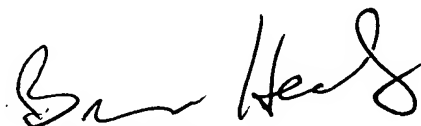
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Martin Blevins whose telephone number is 571-272-8581. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMB

A handwritten signature in black ink, appearing to read "Brian Healy", with a stylized flourish at the end.

**BRIAN HEALY**  
**PRIMARY PATENT EXAMINER**